Later Gater

Diffusion from a balloon

STANDARD 3200-01 Students will evaluate the particulate nature of matter.
OBJECTIVE 3200-0102 Demonstrate the role of motion in the particulate description of matter.

Intended Learning Outcomes:

1a. Make observations and measurements.
1d. Make estimations and predictions based on observations and current knowledge.
2a. Identify variables and describe relationships between them.
2b. Formulate research questions and hypotheses.
2g. Construct models and simulations to describe and explain natural phenomena.
4d. Recognize the personal relevance of science in daily life.

Background:

Be familiar with the particulate nature of matter.

Summary:

1. Students will form hypotheses and observe demonstrations of particle movement.

2. Students will identify variables and describe relationships in simulations of particle movement.

Materials:

- stop watches
- balloons
- vanilla extract
- Pipette

Student Procedures:

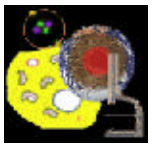
Demo #3 DIFFUSION FROM INSIDE BALLOON

- 1. Teacher pours vanilla extract into a test tube (to disguise identity).
- 2. Using a pipette, drop one or two drops of extract deep into a balloon.
- 3. Students blow up and tie balloons and set on desks for constant observation.
- 4. Do this at the beginning of a class period and move on to other activities while students are silently observing.

    - Students time how long it takes to notice a change in odor around them.
- 5. Within 5-10 min. students will notice a different odor in the room.
- 6. Discussion and hypotheses follow.
    - Where is tthe smell coming from?
    - What does it smell like to you?
    - Is the smell familiar?

Safety concerns:


Be sure to keep all Chemical, and Glassware Safety Rules that are specified by your teacher and in all general laboratory experiences.

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